



EHAOS AMPLIFIERS **Service Manual**

MODEL: CH1200M

SPECIFICATIONS

Maximum power output (2 Ohms): 1200W x 1ch

RMS power Output: 400W x 2ch

Frequency response: 9 - 50KHz

Harmonic distortion: 0.01%

S/N Ratio: 130dB

Power Source Voltage: 14.4V

Ground: Negative

Power consumption: 25A(with 125Wx2 rated output)

External dimensions: 300(W)x65(H)x406(D)mm

To engineers in charge of repair or inspection of our products.

Before repair or inspection, make sure to follow the instructions so that customers and Engineers in charge of repair or inspection can avoid suffering any risk or injury.

1. Use specified parts.

The system uses parts with special safety features against fire and voltage. Use only parts with equivalent characteristics when replacing them. The use of unspecified parts shall be regarded as remodeling for which we shall not be liable. The onus of product liability (PL) shall not be our responsibility in cases where an accident or failure is as a result of unspecified parts being used.

2. Place the parts and wiring back in their original positions after replacement or re-wiring. For proper circuit construction, use of insulation tubes, bonding, gaps to PCB, etc, is involved. The wiring connection and routing to the PWB are specially planned using clamps to keep away from heated and high voltage parts. Ensure that they are placed back in their original positions after repair or inspection. If extended damage is caused due to negligence during repair, the legal responsibility shall be with the repairing company.

3. Check for safety after repair. Check that the screws, parts and wires are put back securely in their original position after repair. Ensure for safety reasons there is no possibility of secondary problems around the repaired spots. If extended damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

4. Caution in removal and making wiring connection to the parts for the automobile. Disconnect the battery terminal after turning the ignition key off. If wrong wiring connections are made with the battery connected, a short circuit and/or fire may occur. If extensive damage is caused due to negligence of repair, the legal responsibility shall be with the repairing company.

5. Cautions regarding chips.

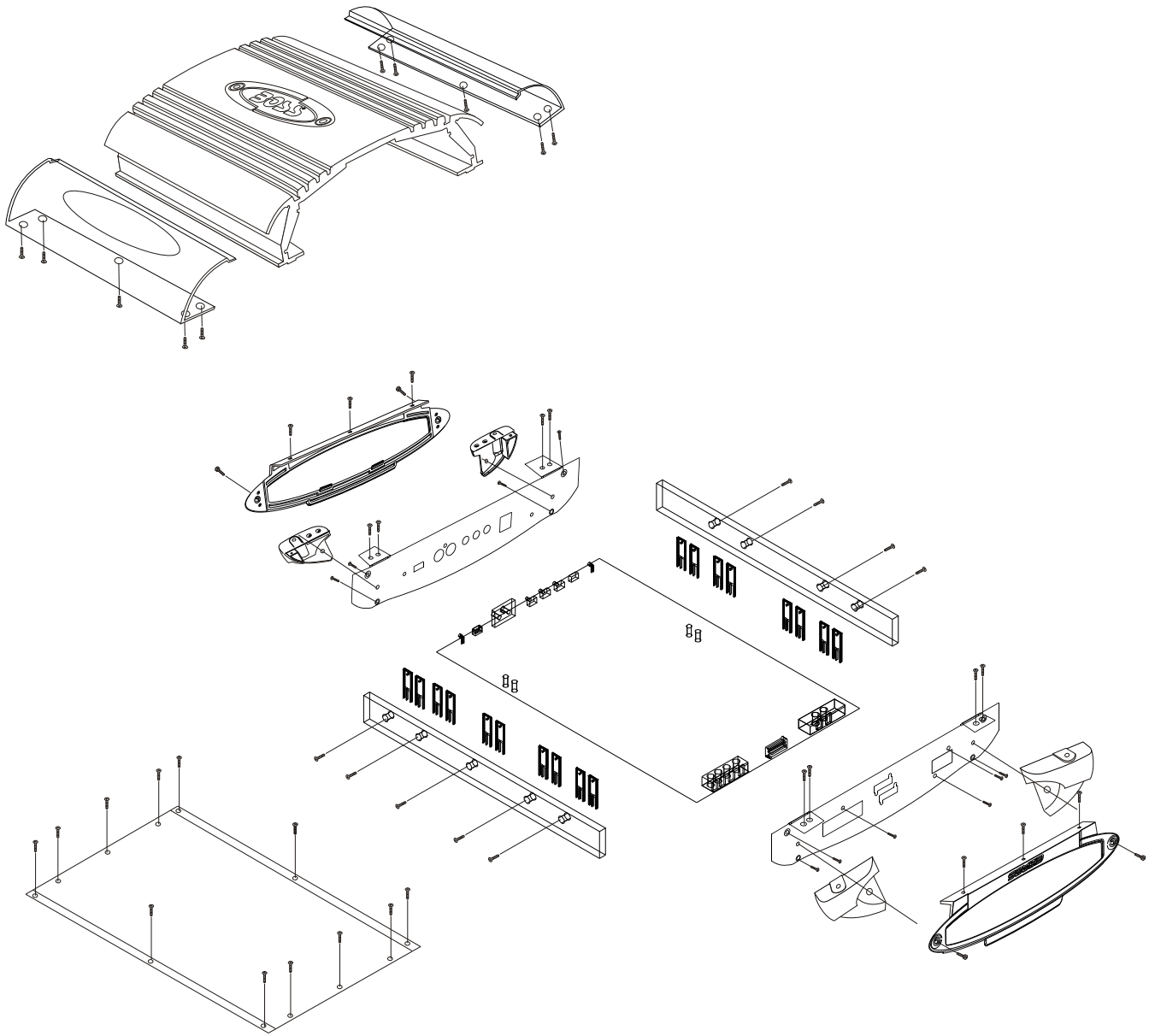
Do not reuse removed chips even when no abnormality is observed in their appearance. Always replace them with new ones. (The chip parts include resistors, capacitors, diodes, transistors, etc). The negative pole of tantalum capacitors is highly susceptible to heat, so use special care when replacing them and check the operation afterwards.

6. Cautions in handling flexible PCB

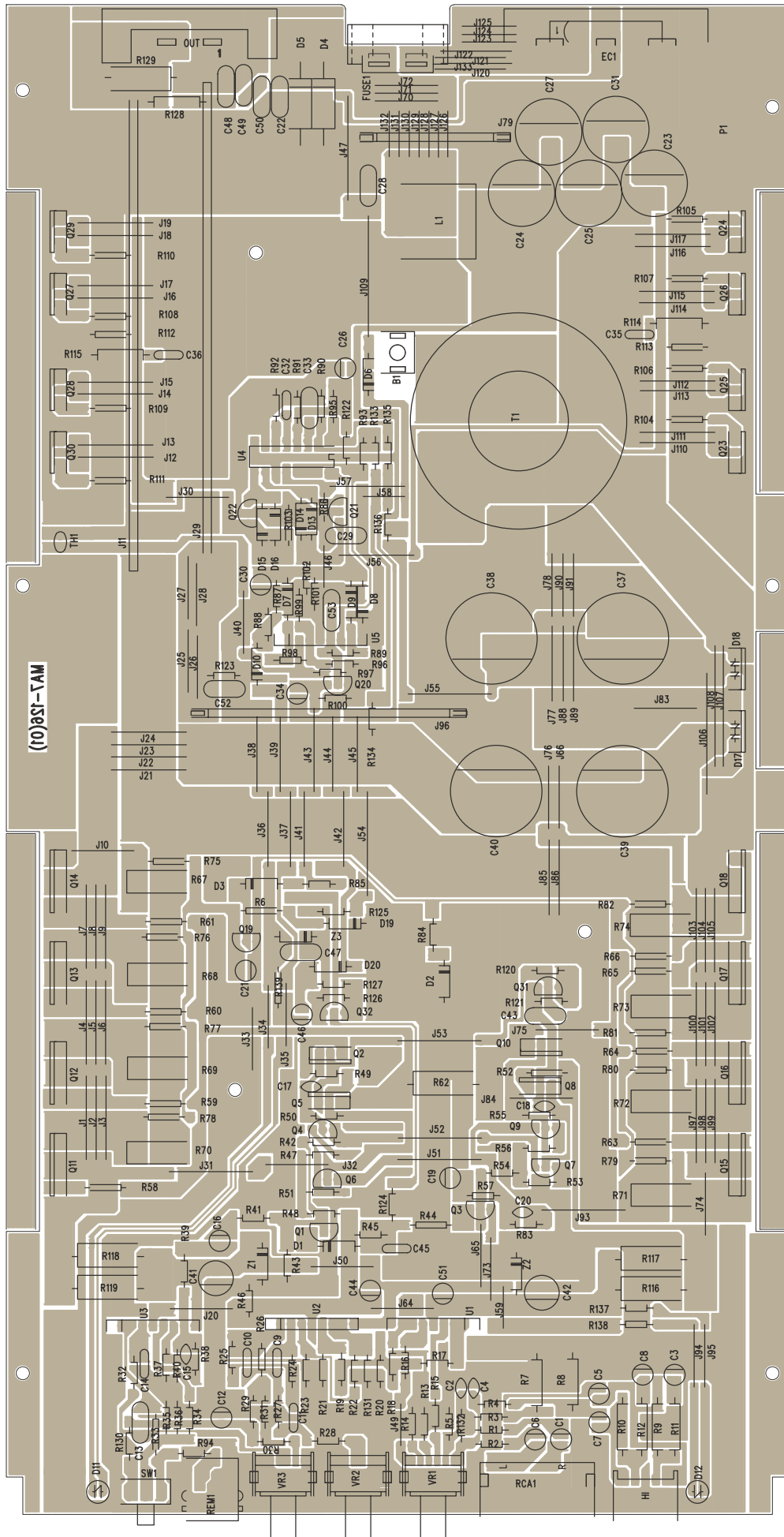
Before working with a soldering iron, make sure that the iron tip temperature is around 270... Take care not to apply the iron tip repeatedly (more than three times) to the same patterns. Also take care not to apply the tip with force.

7. Turn the unit OFF during disassembly and parts replacement. Recheck all work before you apply power to the unit.

EXPLODED VEIW



PRINTED CIRCUIT BOARD



PARTS LIST - 1

| Part Number | desc | Location | qty |
|------------------|---------------------|-----------------------------|-----|
| CR-2000-X1-VOS14 | RCA Jacks | RCA1 | 1 |
| CT-SOCKET0-2MA22 | Speaker terminel | | 1 |
| CT-SOCKET1-3MA17 | Power terminel | | 1 |
| CW-50000X0-H0025 | High Input socket | HI | 1 |
| EC-C4470X0-Z5050 | C Cap 47PF(Z) | C17,18,20 | 3 |
| EC-C4471X0-D5050 | C Cap 470PF(D) | C2,4,15 | 3 |
| EC-E2107X0-M50A1 | E Cap 100UF/16 | C3,5,7,8,19,26,46 | 7 |
| EC-E2477X0-MA0A3 | E Cap 470UF/16 | C41,42 | 2 |
| EC-E4105X0-M50A1 | E Cap 1UF/50V | C12 | 1 |
| EC-E4106X0-M50A1 | E Cap 10UF/50V | C30 | 1 |
| EC-E4108X0-MA3B5 | E Cap 1000/50V | C23,24,25,27,31 | 5 |
| EC-E4474X0-M50A1 | E Cap 0.47/50V | C34 | 1 |
| EC-E4475X0-M50A1 | E Cap 4.7UF/50 | C1,6,16,21,44,51 | 6 |
| EC-E7228X0-MC0C0 | E Cap 2200UF/63V | C37~40 | 4 |
| EC-M5102X0-J5590 | E Cap 0.001 | C45 | 1 |
| EC-M5103X0-J5590 | E Cap 0.01 | C9,10 | 2 |
| EC-M5104X0-JA0A3 | Mylar Cap 0.1 | C22,28,29,33,43,47,48,52,53 | 9 |
| EC-M5153X0-J5785 | Mylar Cap 0.015 | C35,36 | 2 |
| EC-M5154X0-JA2A4 | Mylar Cap 0.15 | C13 | 1 |
| EC-M5183X0-J60A1 | Mylar Cap 0.018 | C14 | 1 |
| EC-M5473X0-J80A1 | Mylar Cap 0.047 | C11,49,50 | 3 |
| EC-M5562X0-J50A1 | Mylar Cap 0.0056 | C32 | 1 |
| ED-R2502C0-H0000 | ESAC25-02C | D18 | 1 |
| ED-R2502N0-H0000 | Mylar CapESAC25-02N | D17 | 1 |
| ED-R4001X0-H0000 | Diode IN-4001 | D6 | 1 |
| ED-R5401X0-H0000 | Diode IN-5401 | D4,5 | 2 |
| ED-S4148X0-H0000 | Diode IN-4148 | D1-3,7-10,13-16,19,20 | 13 |
| ED-Z10V0X0-H0500 | Diode 10V 0.5W | Z3 | 1 |
| ED-Z15VXX0-H4744 | ZENER IN4744 | Z1,Z2 | 2 |
| EE-C23X5X0-10302 | LED Red 3MM | D11 | 1 |
| EE-C53X5X0-10302 | LED Green 3MM | D12 | 1 |
| EO-CMA5480-H0027 | Choke coil MA5-48 | L1 | 1 |
| EO-IMA7126-VXXX8 | Transformer | T1 | 1 |
| ER-CS022X0-VE0I0 | SLR0.22 5W J | R67-74 | 8 |
| ER-HG153X0-HXXXX | THERMISTOR 150K | TH1 | 1 |
| ER-OG022X0-H2526 | Resistor 2.2 1/4W | R58-61,63-66 | 8 |

PARTS LIST - 2

| | | | |
|------------------|----------------------|-----------------------------------------------------|----|
| ER-OG047X0-HA04C | Resistor 4.7 1W | R128 | 1 |
| ER-OG100X0-HA04C | Resistor 10 1W | R114,115 | 2 |
| ER-OG101X0-H2526 | Resistor 100 1/4W | R19,22,26,34,47,51,53,56,104-111 | 16 |
| ER-OG101X0-HA04C | Resistor 100 1W | R9,10 | 2 |
| ER-OG102X0-H2526 | Resistor 1K 1/4W | R15,16,37,39,41,50,55,57,102,103,124,33,139, R75~82 | 21 |
| ER-OG103X0-H2526 | Resistor 10K 1/4W | R6,30,38,43,46,84-85,88,96,100,101,127 | 12 |
| ER-OG104X0-H2526 | Resistor 100K 1/4W | R5,R23 | 2 |
| ER-OG105X0-H2526 | Resistor 1M 1/4W | R21 | 1 |
| ER-OG152X0-HA04C | Resistor 1.5K 1W | R129,116~119 | 5 |
| ER-OG154X0-H2526 | Resistor 150K 1/4W | R20,24,25 | 3 |
| ER-OG202X0-H2526 | Resistor 2K 1/4W | R17,18 | 2 |
| ER-OG203X0-H2526 | Resistor 20K 1/4W | R83 | 1 |
| ER-OG220X0-HA04C | Resistor 22 1W | R7,8 | 2 |
| ER-OG221X0-H2526 | Resistor 220 1/4W | R91,112,113,125,94 | 5 |
| ER-OG222X0-H2526 | Resistor 2.2K 1/4W | R1,2,86,87,95,137,138 | 7 |
| ER-OG224X0-H2526 | Resistor 220K 1/4W | R45 | 1 |
| ER-OG272X0-H2526 | Resistor 2.7K 1/4W | R93,121,126 | 3 |
| ER-OG273X0-H2526 | Resistor 27K 1/4W | R97 | 1 |
| ER-OG330X0-HA04C | Resistor 33 1W | R11,12 | 2 |
| ER-OG332X0-H2526 | Resistor 3.3K 1/4W | R89,92 | 2 |
| ER-OG333X0-H2526 | Resistor 33K 1/4W | R44 | 1 |
| ER-OG470X0-H2526 | Resistor 47 1/4W | R49,52 | 2 |
| ER-OG471X0-HA04C | Resistor 470 1W | R62 | 1 |
| ER-OG472X0-H2526 | Resistor 4.7K 1/4W | R120,123 | 2 |
| ER-OG473X0-H2526 | Resistor 47K 1/4W | R40 | 1 |
| ER-OG511X0-H2526 | Resistor 510 1/4W | R13,14,29 | 3 |
| ER-OG512X0-H2526 | Resistor 5.1K 1/4W | R42,122 | 2 |
| ER-OG513X0-H2526 | Resistor 51K 1/4W | R3,4 | 2 |
| ER-OG563X0-H2526 | Resistor 56K 1/4W | R28 | 1 |
| ER-OG681X0-H2526 | Resistor 680 1/4W | R90 | 1 |
| ER-OG683X0-H2526 | Resistor 68K 1/4W | R27,31,35,36 | 4 |
| ER-OG684X0-H2526 | Resistor 680K 1/4W | R98 | 1 |
| ER-OG822X0-H2526 | Resistor 8.2K 1/4W | R48,54,99 | 3 |
| ER-OG823X0-H2526 | Resistor 82K 1/4W | R32 | 1 |
| ET-C1023X0-PY000 | Transistor KTA1023-Y | Q20-22,32 | 4 |
| ET-C1027X0-NY000 | Transistor KTC1027-Y | Q3 | 1 |

PARTS LIST - 3

| | | | |
|------------------|--------------------------|-------------------------------------------------------------|----|
| ET-C1220X0-PY000 | Transistor KSA1220A | Q2 | 1 |
| ET-C1266X0-PY000 | Transistor A1266Y | Q7,Q9 | 2 |
| ET-C1694X0-PY000 | Transistor 2SA1694 | Q15-18 | 4 |
| ET-C2690X0-NY000 | Transistor KSC2690A | Q8 | 1 |
| ET-C3198K0-NY000 | Transistor KTC3198-Y | Q1,4,6,19,31 | 5 |
| ET-C4467X0-NY000 | Transistor 2SC4467 | Q11-14 | 4 |
| ET-FFZ44X0-X0000 | Mosfet IRFZ 44N | Q23-30 | 8 |
| ET-TI41CX0-NY000 | Transistor TIP41C | Q5 | 1 |
| ET-TI42CX0-P0000 | Transistor TIP42C | Q10 | 1 |
| EW-BG30XX0-01XCU | Copper Jumper plate 30MM | J79 | 2 |
| EW-BG60XX0-01XCU | Copper Jumper plate 60MM | J96 | 1 |
| EW-CS04XX0-05AA0 | Bare wire 4MM | 連接開關 | 1 |
| EW-CS10XX0-05AA0 | Bare wire 10MM | J46,49,58,59 | 4 |
| EW-CS11XX0-05AA0 | Bare wire 11MM | J126~132 | 7 |
| EW-CS13XX0-05AA0 | Bare wire 13MM | J123,124,125 | 3 |
| EW-CS15XX0-05AA0 | Bare wire 15MM | J10,20,25~28,30,32~35,40,50,70~76,78,83~84,90,91,94,95 | 30 |
| EW-CS17XX0-05AA0 | Bare wire 17MM | J120,133,121,122 | 4 |
| EW-CS18XX0-05AA0 | Bare wire 18MM | J12~19,21~24,36~39,41,42,44,45,56,77,85,86,88,89,110~117,57 | 35 |
| EW-CS20XX0-05AA0 | Bare wire 20MM | J1~9,31,43,51~53,55,93,97~105 | 25 |
| EW-CS25XX0-05AA0 | Bare wire 25MM | J47,54 | 2 |
| EW-CS30XX0-05AA0 | Bare wire 30MM | J106~109 | 4 |
| II-4558LX0-V0008 | IC NJM4558L | U1~3,5 | 4 |
| II-DBL494X-H0016 | IC S-494P | U4 | 1 |
| VR-BN104X0-V0A06 | VR 100KBX2 T10 | VR3 | 1 |
| VR-BN203X0-V0A06 | VR 20KB T10 | VR1 | 1 |
| VR-BN504X0-V0A06 | VR 500KB T10 | VR2 | 1 |